

GAMMA/DELTA T CELLS DEFINED BY A NEW LINEAGE SPECIFIC MONOCLONAL ANTIBODY (mAb)^{MAS}

Ward Jones, Mark Jutila, and Bruce Walcheck
Veterinary Molecular Biology, Montana State University, Bozeman, MT

In the mid-1980s a new T cell subset was described based upon a unique T cell receptor (TCR). The new TCR, termed gamma/delta, is expressed on an unusual population of T cells. In humans, gamma/delta T cells comprise 2-5 percent of circulating lymphocytes. However, in bovine, gamma/delta T cells can comprise up to 80 percent of the lymphocyte population. Gamma/delta T cell function is not fully understood. They appear to be one of the more ancient immune cell types and possess some myeloid-like characteristics. These T cells are found in non-lymphatic tissues such as the intestinal mucosa and skin. Due to their

unusual location, it is thought that gamma/delta T cells may play a role in the "first line of defense". We demonstrated, by FACS analysis and polyacrylamide gel electrophoresis, a lineage specific 220kD epitope on gamma/delta T cells that is distinct from other known cell surface markers. Upon mitogen stimulation, this marker regulates differently than other known cell surface markers on gamma/delta T cells. Finally, *in vivo* and *in vitro* data suggest that virtually all circulating gamma/delta T cells express the 220kD antigen while tissue gamma/delta T cells appear to down regulate the expression of this marker.